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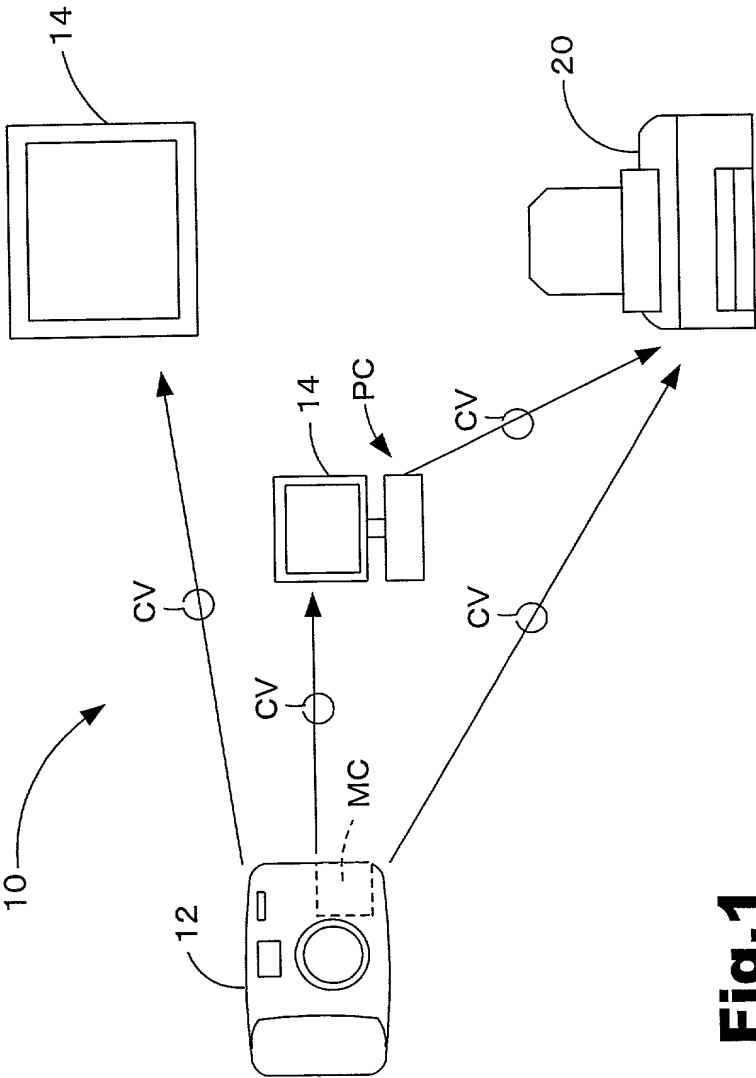


Fig.1

The diagram shows a video camera system 12. It includes a CONTROL CIRCUIT 124 and an IMAGE PROCESSING CIRCUIT 123. The CONTROL CIRCUIT 124 is connected to a LIQUID CRYSTAL DISPLAY 127 via a bus 126 (represented by a circle with a cross). The CONTROL CIRCUIT 124 is also connected to an IMAGE ACQUIRING CIRCUIT 122. The IMAGE ACQUIRING CIRCUIT 122 is connected to a camera lens 121. The IMAGE ACQUIRING CIRCUIT 122 is also connected to a dashed box representing a sensor or memory, which is connected to a microcomputer (MC).

GF

GRAPHICS DATA INFORMATION GI

102 GRAPHICS DATA INFORMATION STORAGE AREA

GRAPHICS DATA GD

101 GRAPHICS DATA STORAGE AREA

Fig.4

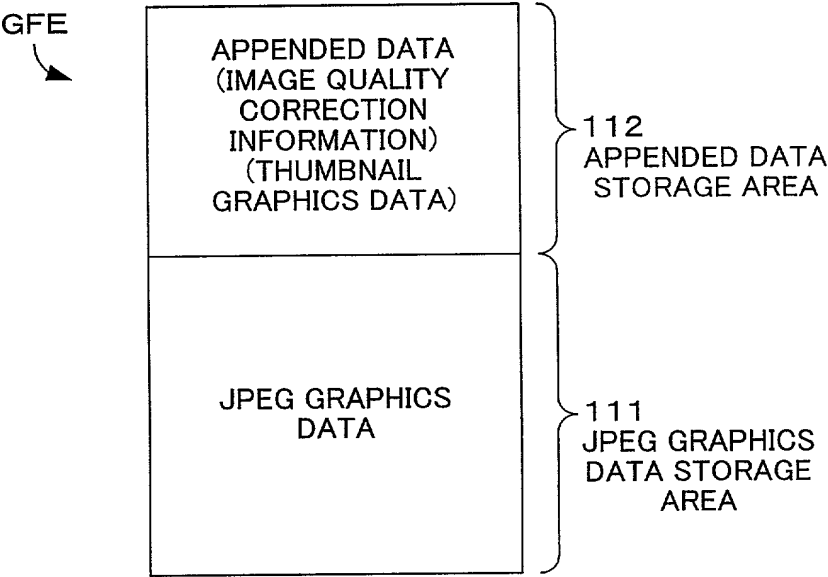


Fig.5

TAG NAME	PARAMETER VALUE	112 APPENDED DATA STORAGE AREA
EXPOSURE TIME	1/137 SEC	
LENS F NUMBER	F10. 1	
EXPOSURE BIAS VALUE	EVO. 4	
MIN. F VALUE	F2. 0	
LENS FOCAL DISTANCE	20. 70(mm)	
COLOR SPACE INFORMATION	sRGB	
PICTURE MODE	1	
AUTO ADJUST LEVEL	5	
⋮	⋮	

Fig.6

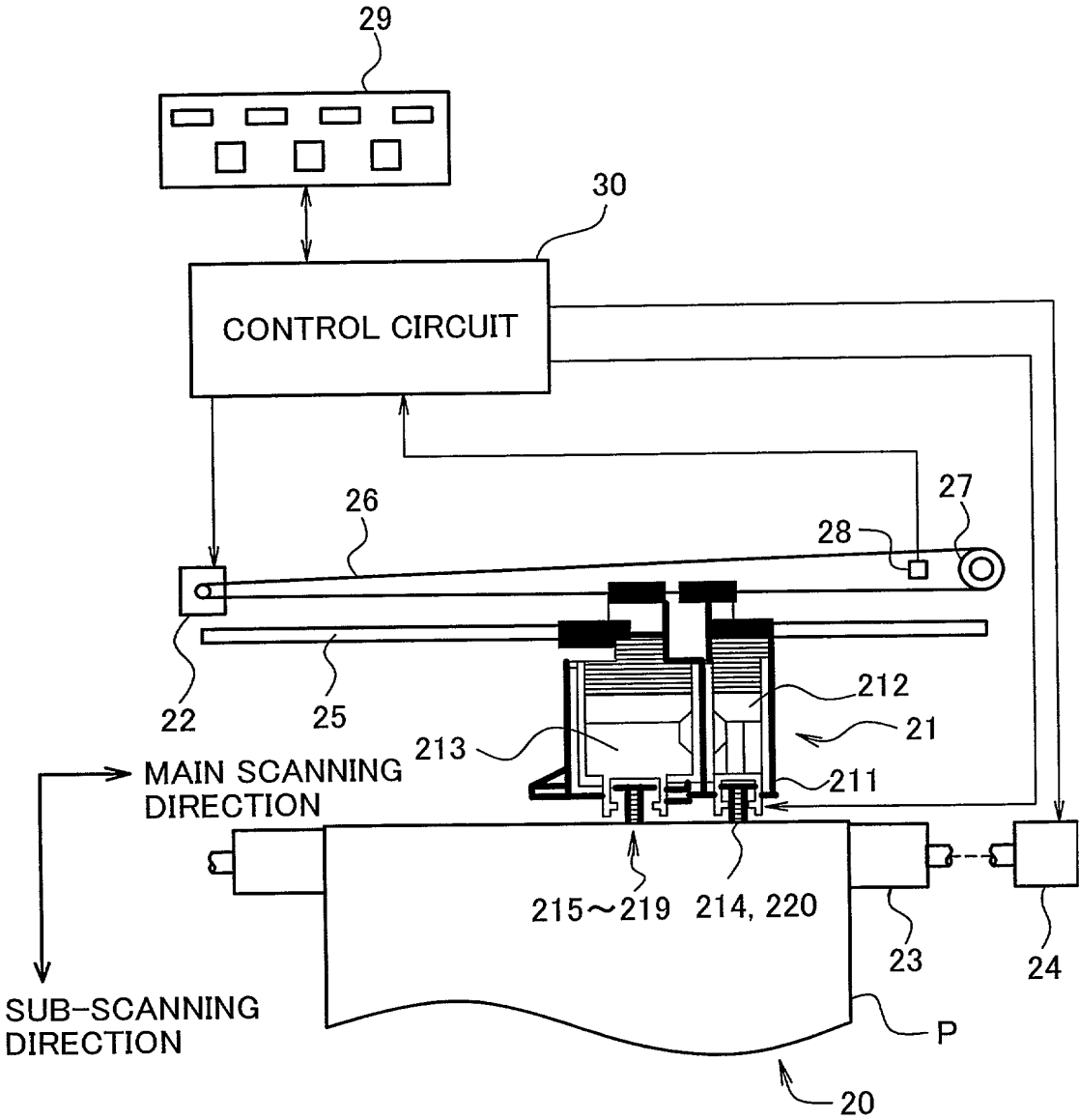


Fig.7

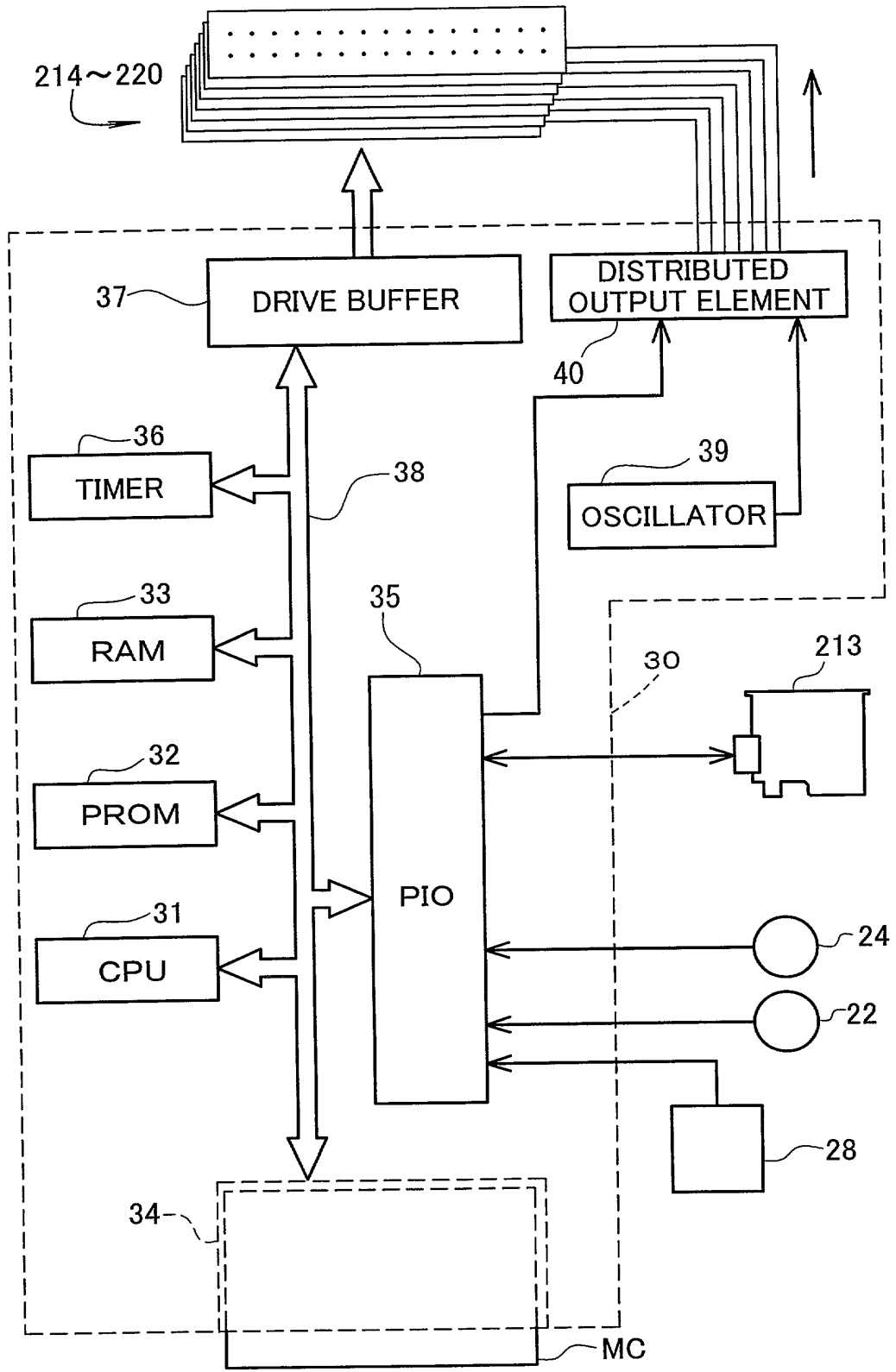


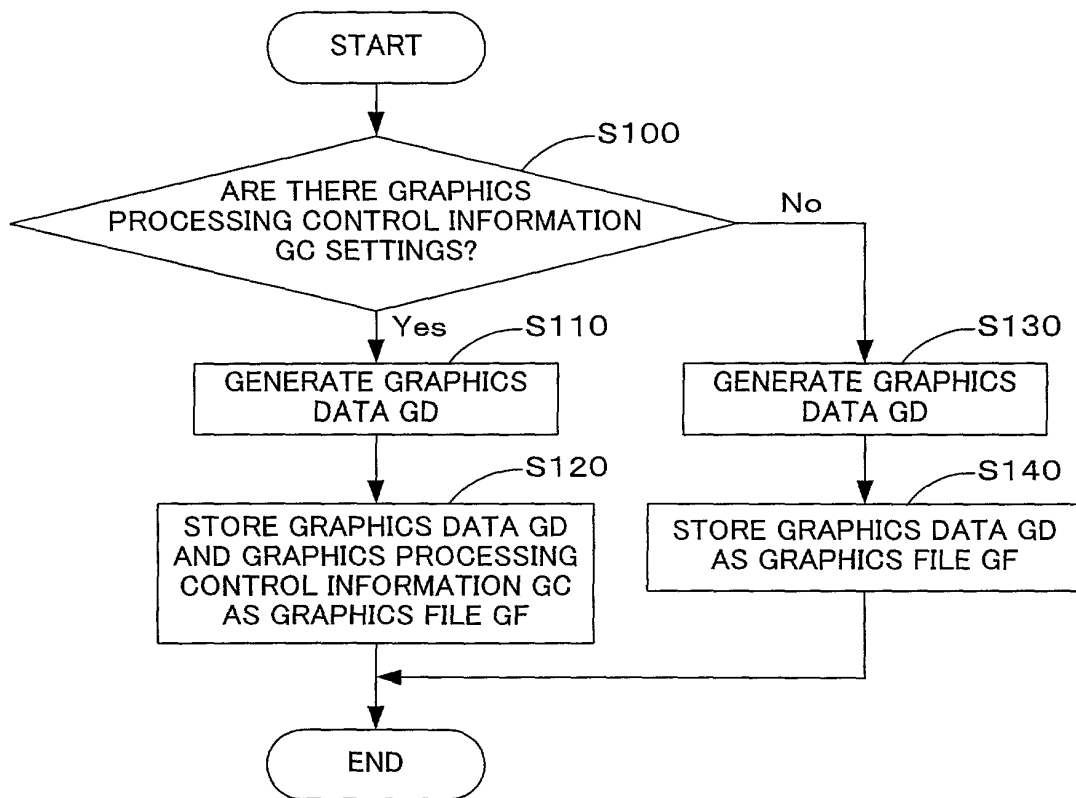
Fig.8

Fig.9

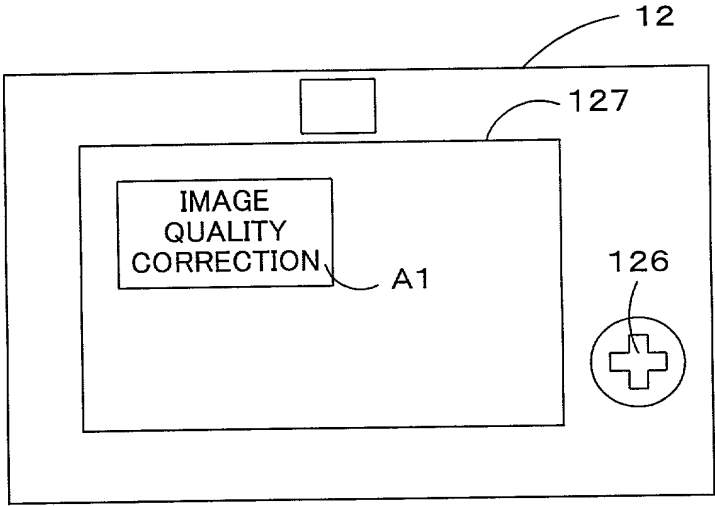


Fig.10

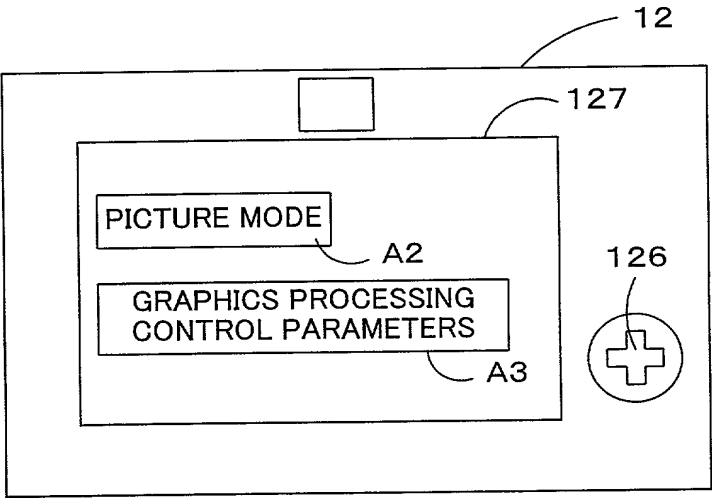


Fig.11

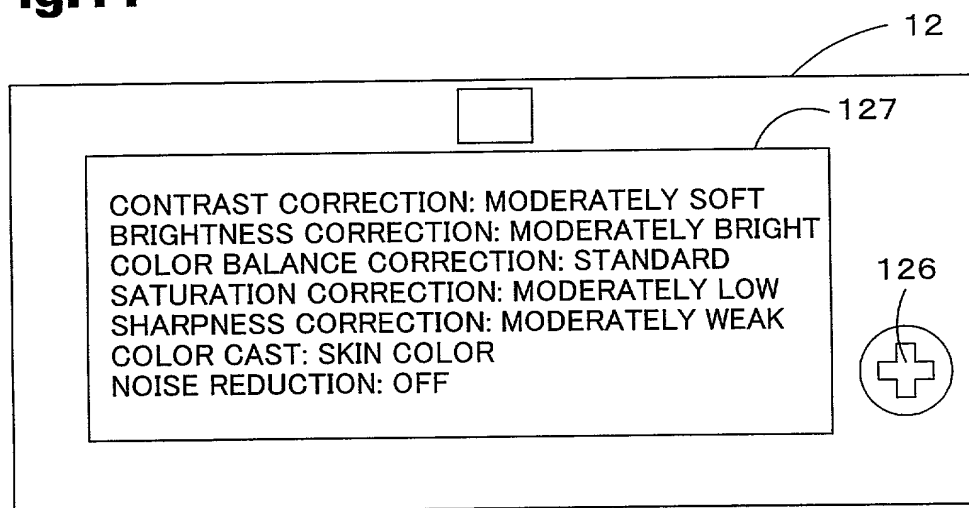


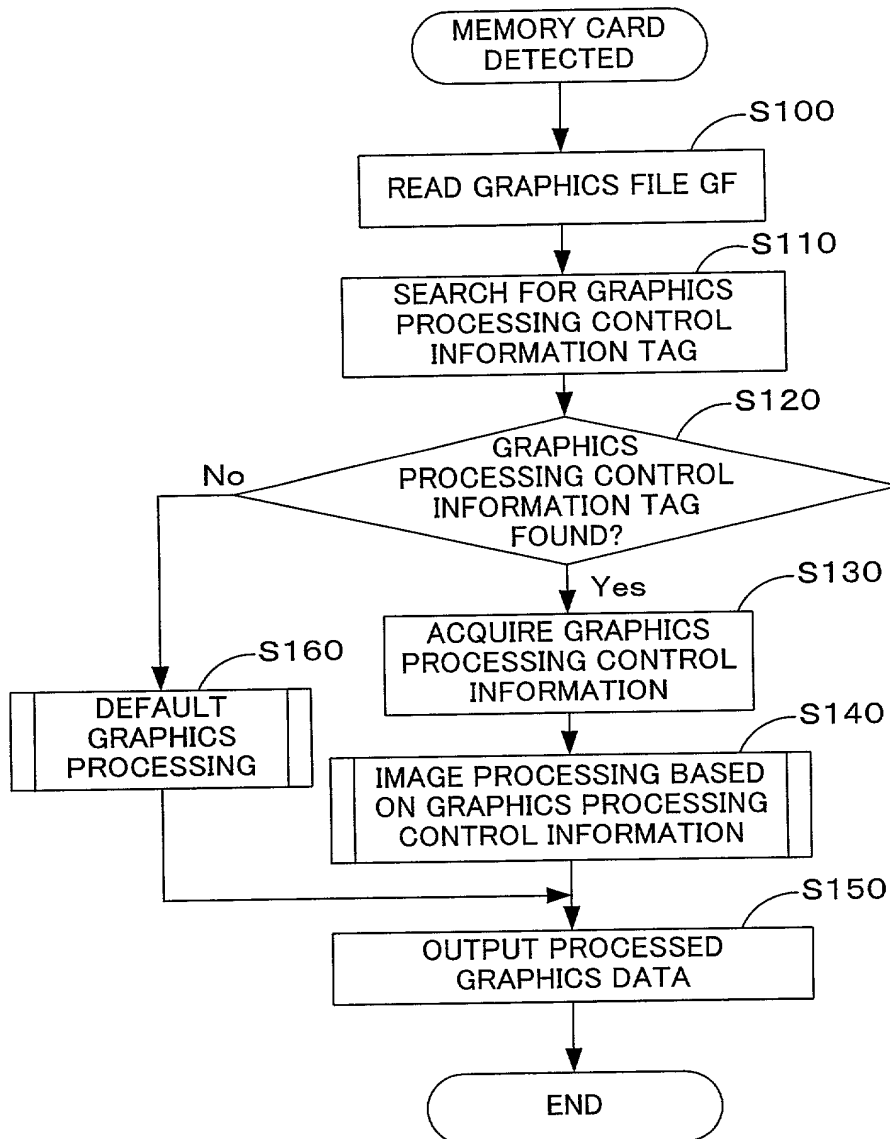
Fig.12

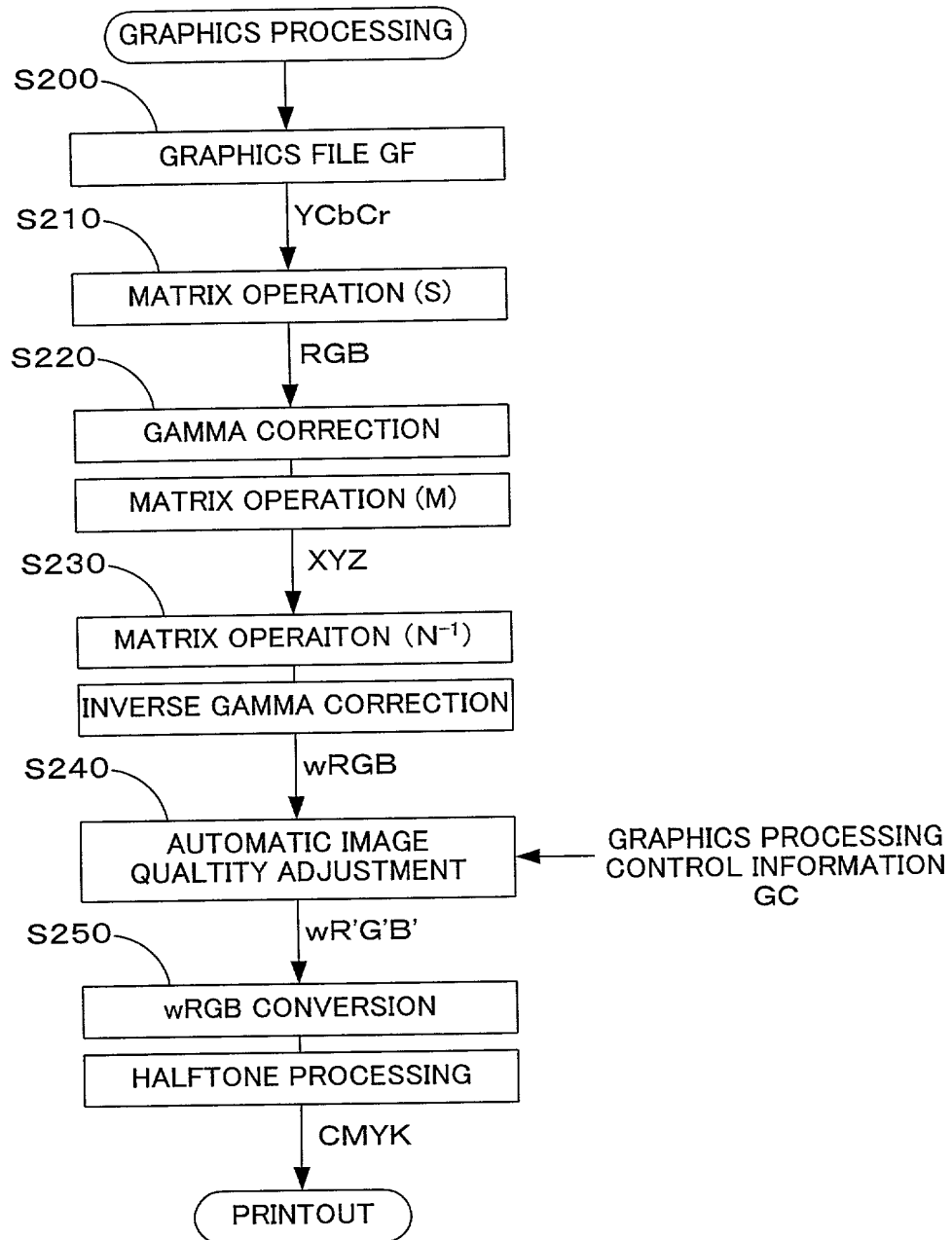
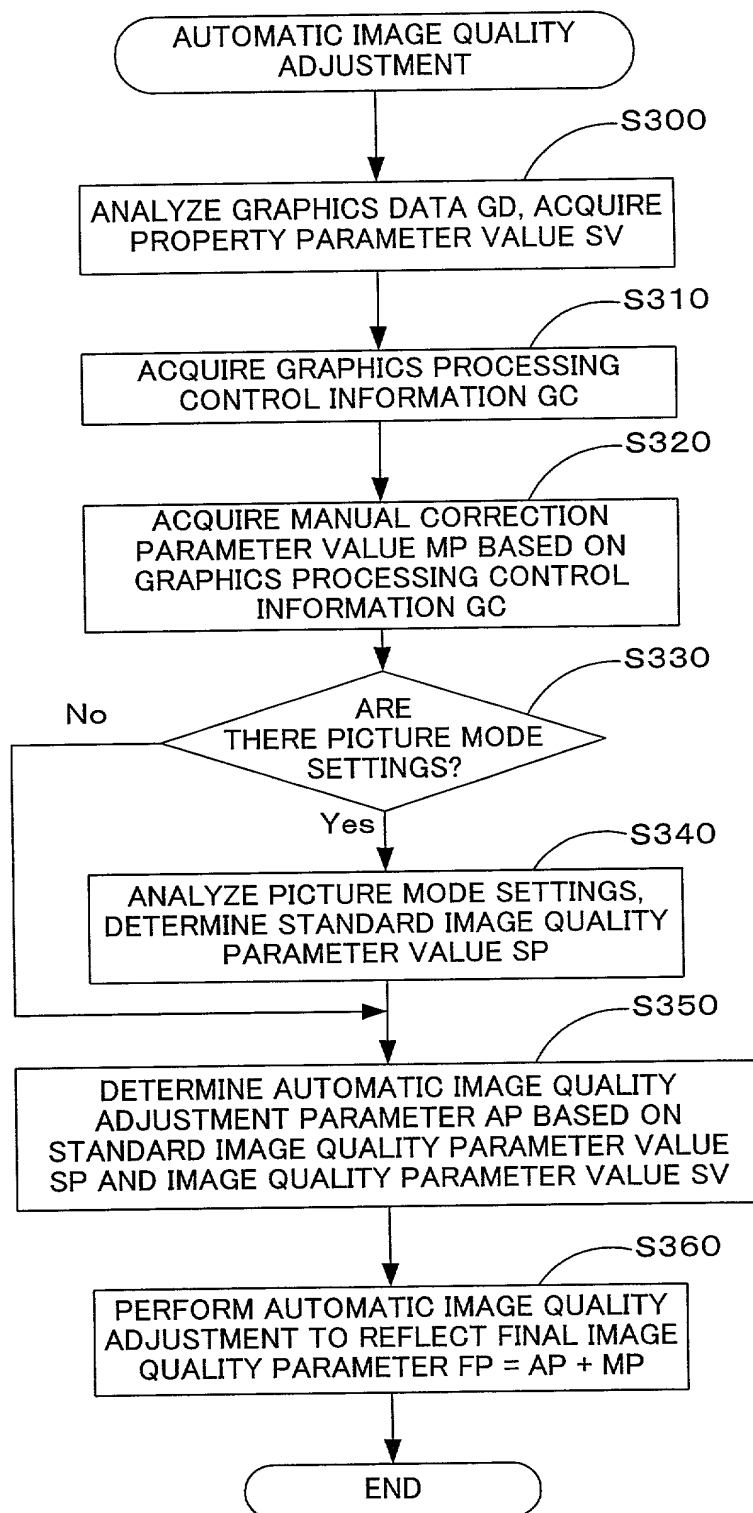
Fig.13

Fig.15

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Fig.16

MODE	CONTRAST	BRIGHTNESS	COLOR BALANCE	SATURATION	SHARPNESS	COLOR CAST	NOISE REDUCTION
1	STANDARD	STANDARD	STANDARD	STANDARD	STANDARD	OFF	OFF
2	MOD. SOFT	MOD. BRIGHT	STANDARD	MOD. LOW	MOD. LOW	SKIN COLOR	OFF
3	MOD. HARD	STANDARD	STANDARD	MOD. HIGH	MOD. HIGH	SKY/GREEN	OFF
4	STANDARD	DARK	OFF	STANDARD	MOD. LOW	RED	ON
5	STANDARD	DARK	OFF	STANDARD	STANDARD	OFF	ON
6	MOD. SOFT	MOD. BRIGHT	WEAK	MOD. HIGH	STANDARD	GREEN	OFF
7	STANDARD	STANDARD	WEAK	STANDARD	HIGH	OFF	OFF
8	HARD	STANDARD	STANDARD	MOD. HIGH	HIGH	OFF	OFF
9	MOD. SOFT	BRIGHT	STANDARD	STANDARD	STANDARD	OFF	OFF
10	STANDARD	STANDARD	STANDARD	HIGH	MOD. HIGH	OFF	OFF
11	STANDARD	MOD. BRIGHT	STANDARD	STANDARD	MOD. HIGH	SKIN COLOR	OFF

Fig.17

IMAGE QUALITY PARAMETER	AP	MP	FP	FP'
BRIGHTNESS	16	10	26	42
SHARPNESS	5	−10	−5	0

Fig.18

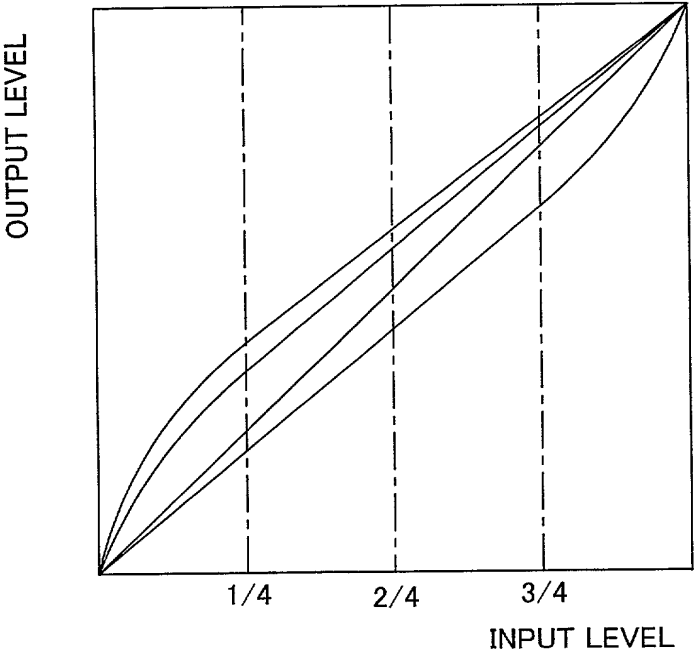


Fig.19

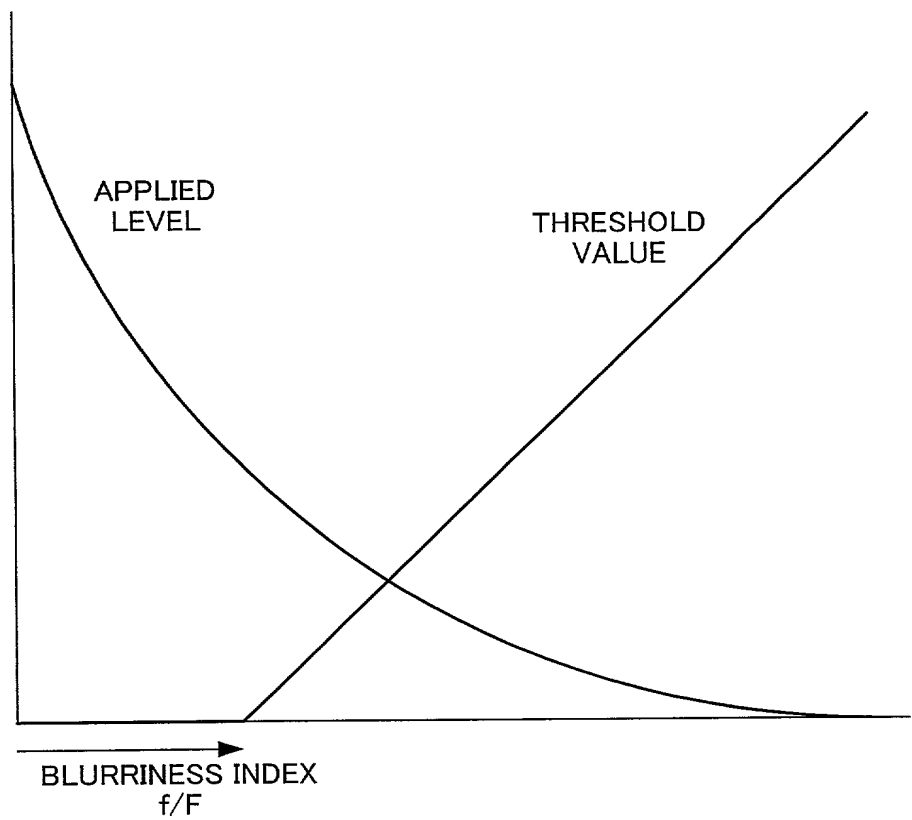


Fig.20

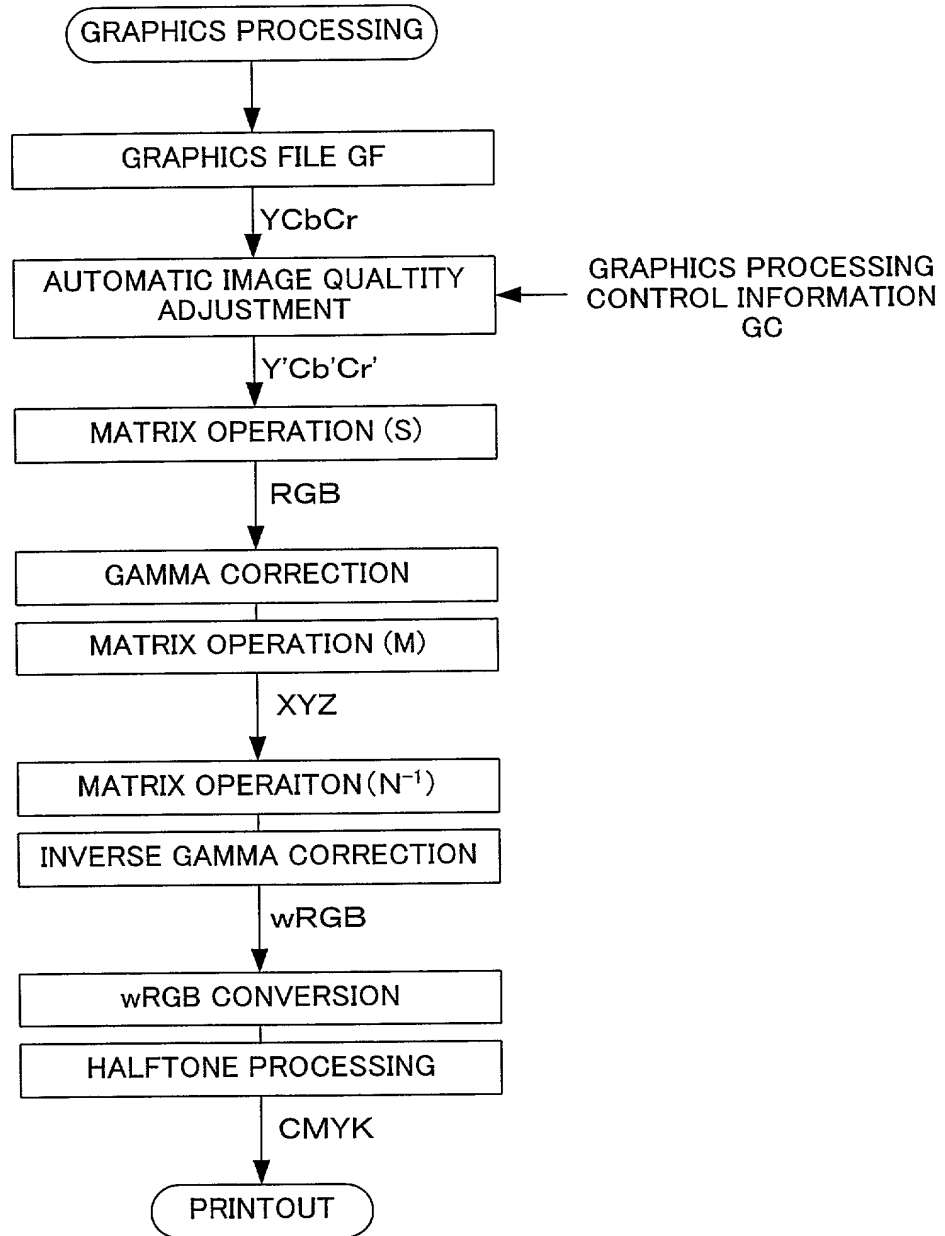


Fig.21

$$\begin{pmatrix} R \\ G \\ B \end{pmatrix} = \mathbf{S} \begin{pmatrix} Y \\ Cb-128 \\ Cr-128 \end{pmatrix}$$

$$\mathbf{S} = \begin{pmatrix} 1 & 0 & 1.40200 \\ 1 & -0.34414 & -0.71414 \\ 1 & 1.77200 & 0 \end{pmatrix}$$

Fig.22

$$\begin{pmatrix} X \\ Y \\ Z \end{pmatrix} = \mathbf{M} \begin{pmatrix} Rt' \\ Gt' \\ Bt' \end{pmatrix} \quad \mathbf{M} = \begin{pmatrix} 0.6067 & 0.1736 & 0.2001 \\ 0.2988 & 0.5868 & 0.1144 \\ 0 & 0.0661 & 1.1150 \end{pmatrix}$$

$$Rt, Gt, Bt \geq 0$$

$$Rt' = \left(\frac{Rt}{255} \right)^r$$

$$Gt' = \left(\frac{Gt}{255} \right)^r$$

$$Bt' = \left(\frac{Bt}{255} \right)^r$$

$$Rt, Gt, Bt < 0$$

$$Rt' = - \left(\frac{-Rt}{255} \right)^r$$

$$Gt' = - \left(\frac{-Gt}{255} \right)^r$$

$$Bt' = - \left(\frac{-Bt}{255} \right)^r$$

Fig.23

$$\begin{pmatrix} R_w \\ G_w \\ B_w \end{pmatrix} = \mathbf{N}^{-1} \begin{pmatrix} X \\ Y \\ Z \end{pmatrix}$$

$$\mathbf{N}^{-1} = \begin{pmatrix} 3.30572 & -1.77561 & 0.73649 \\ -1.04911 & 2.1694 & -1.4797 \\ 0.0658289 & -0.241078 & 1.24898 \end{pmatrix}$$

$$R_{w'} = \left(\frac{R_w}{255} \right)^{1/\gamma} \qquad G_{w'} = \left(\frac{G_w}{255} \right)^{1/\gamma} \qquad B_{w'} = \left(\frac{B_w}{255} \right)^{1/\gamma}$$

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